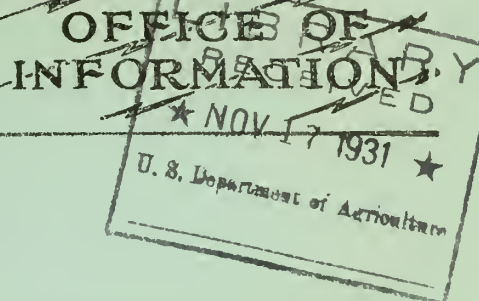


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YOUR FARM REPORTER AT WASHINGTON

Wednesday, December 2, 1931.

NOT FOR PUBLICATION

Speaking Time: 10 Minutes.

All Regions

## VITAMINS IN THE POULTRY DIET

ANNOUNCEMENT: At the request of Station \_\_\_\_\_ YOUR FARM REPORTER AT WASHINGTON has been gathering up the latest information on vitamins. He's ready now to make his report. We'll now hear from him on the subject "Vitamins in the Poultry Diet."

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No one knows just exactly what vitamins are. And yet it's very easy to prove that they do exist.

The term vitamin, you know, is a group name given to certain substances in natural food materials. Certain substances that are quite apart from proteins, fats, carbohydrates and minerals.

We know that these substances are present because an animal ration containing plenty of proteins, fats, and carbohydrates and minerals may still be lacking in some essential element. Two pens of poultry, for instance, can be given foods containing exactly the same amounts of proteins, fats, carbohydrates and minerals. One will grow and thrive and lay eggs. The other will be weakly, subject to disease, and will produce very few eggs. The answer is that the ration fed the first pen contained the necessary substances we call vitamins. The second ration was deficient in these substances.

That's how vitamins were first discovered, by the way. And now, since we know about vitamins, it's a very simple matter to prove that they are present in foods. Anyone can very easily conduct such an experiment to his own satisfaction. Vitamins constitute only a very small part of the ration. But if they are lacking the results are very marked.

Mr. A. R. Lee, Department of Agriculture poultry husbandman, told me of an experiment conducted on the government poultry farm. The experiment was to test the effect of a lack of vitamin D. Eighty Rhode Island Red Chickens were divided into two pens. Both pens were confined so that they received only indirect sunlight, sunlight being a valuable substitute for this vitamin. Both were fed complete rations, except that the first pen was given codliver oil, a rich source of vitamin D.

Well, at the end of 12 weeks the chickens in Pen No. 1 averaged 2.7 pounds apiece. Those in Pen No. 2 weighed an average of only 1-1/2 pounds,



little more than half as much. And all of the chickens in the first pen lived and thrived, whereas in the second the mortality was heavy.

So far six vitamins have been found to exist in foods. And each one is essential for proper animal nutrition. For poultry the third vitamin, vitamin C, does not seem to be necessary. But for human beings and certain other animals it is.

Let's run over the six vitamins briefly. First, vitamin A. Lack of vitamin A in the diet causes poultry to stop growing and lose weight. It also lowers their vitality and makes them less able to resist disease. Young and growing chickens naturally require more of this vitamin than mature fowls.

Where does vitamin A occur? Well, it is fairly well distributed. It is associated with many of the fats. All green feeds, codliver oil, yellow corn, egg yolk, tomatoes, yellow carrots, and milk are the principal sources.

Vitamin B has been found to be two vitamins instead of one, so we'll divide it into B and G. Vitamin B is easily destroyed by heat, while G is comparatively stable to heat.

Taking the two together, they are the most widely distributed of all the vitamins. And they're usually well supplied in ordinary poultry rations. Corn, wheat, oats, middlings, and bran contain considerable quantities. And they're abundant in all green feed and in yeast.

The complete absence of vitamin B from the diet is followed in a short time by loss of appetite, rapid loss of weight, and death. And it doesn't take long for these symptoms to show up. The body apparently can't store up this vitamin as it can vitamin A, for instance.

Vitamin C, as I've said, does not seem to be needed by poultry. In man, guinea pigs and certain other animals, however, the lack of vitamin C in the diet is the cause of scurvy.

Now for vitamin D, a very important one to poultry growers. Lack of it causes leg weakness, or rickets, in brooder chicks. The reason is that Vitamin D makes it possible for animals to utilize minerals which go to build up the bones. This vitamin is most abundant in cod liver oil and egg yolk, but some of the green feeds and milk also contain small quantities.

The last vitamin we know about is vitamin E. It affects sterility. It seems to be necessary to reproduction. The richest source yet found is the wheat germ. Green feeds, germinated oats, yellow corn, and cottonseed and olive oils contain it in small quantities. Milk also contains it in very small amounts. Codliver oil, though, contains none at all.

Fortunately, you see, the grains commonly fed to poultry, especially yellow corn, furnished a fair supply of vitamins. It isn't hard to prepare a ration supplying all of the necessary vitamins in sufficient amounts. And as green feeds contain practically all the vitamins their value is very apparent.





Mr. Lee said that vitamins for poultry feeding should ordinarily be supplied in the natural feeds and not bought from the drug store. However, at this time of year particularly, it's usually necessary to give some cod liver oil. Cod liver oil should be fed to hens which are kept confined to the house, and also to breeding fowls during the winter and early spring months.

Since cod liver oil is rich in both vitamins A and D it is also essential in the ration of chicks while they are confined to the brooder house. It tends to prevent leg weakness. After the chicks are out of doors, in the sunlight and on good grass range, the oil, of course isn't necessary.

As to the feeding of cod-liver oil Mr. Lee gave me the following suggestions: Add from one pint to one quart of oil to each 100 pounds of mash for either chicks or hens. Mix it with a small quantity of the feed and then incorporate it in the entire mixture. Don't however, mix more than two weeks' supply of feed with the oil.

Many poultrymen are also feeding the codliver oil in the scratch grain instead of in the mash. And that seems to be a good idea, Mr. Lee said. It's easier to mix, for one thing.

Now just a word about direct sunlight. As you know, direct sunlight serves as a substitute for vitamin D, and it is effective in curing leg weakness. It is needed by poultry of all ages.

This health-giving property in sunlight is found in ultra-violet rays. But these rays will not pass through ordinary window glass. Glass substitutes used in poultry buildings are of some advantage in this connection. They allow some of the ultra-violet rays to pass through, provided they're kept free from dust. But Mr. Lee says that the results are not as good as those obtained from direct sunlight.

So far we've been considering the necessity of vitamins only in connection with poultry health and growth. There are other reasons why they are necessary. I have time for just one example.

You'll remember that egg yolk is one of the most valuable sources of vitamin D. In fact, the most valuable next to the fish oils. The presence of this vitamin in the yolk adds greatly to the value of eggs, especially in the diet of children. Well, the point is that the Vitamin D content of eggs is affected by the feeding and management of the hens. To store this vitamin in her eggs the hen must first get it in her ration.

ANNOUNCEMENT: That was YOUR FARM REPORTER, ladies and gentlemen, giving you the latest information in vitamins--vitamins in the poultry diet. If you have any questions drop him a line. Address your letters either to Station \_\_\_\_\_ or to The Department of Agriculture in Washington.





★ NOV 17 1931 ★

U. S. Department of Agriculture

YOUR FARM REPORTER AT WASHINGTON

Friday, December 4, 1931.

NOT FOR PUBLICATION

Speaking Time: 9 Minutes.

All Regions.

## DISEASES OFTEN MISTAKEN FOR HOG CHOLERA.

OPENING ANNOUNCEMENT: For the next 8 or 9 minutes we are going to listen to your Farm Reporter talk about hog diseases which are often mistaken for hog cholera. He got this information by interviewing the chief of the Division of hog-cholera control of the United States Bureau of Animal Industry. All right, Mr. Reporter.

--o0o--

Folks, did you ever make a mistake? Most of us have made many of them. I once heard a great man say that a mistake might not be serious if it was immediately acknowledged as a mistake and corrected.

I read in the paper the other day that hog 'flu' and pneumonia were exacting heavy tolls from hog raisers in some sections, and that these diseases were often mistaken for hog cholera. This gave me a thought for a radio talk, and I went in search of information and to find out what Uncle Sam's scientists had to say on this subject.

In order to get this information straight I went over and had a talk with Dr. U. G. Houck, chief of the Division of Hog-Cholera Control for the United States Bureau of Animal Industry. I found him willing and ready to talk, and his many years of experience places him in a position to know what he is talking about when discussing hog troubles.

I asked Dr. Houck if there had been very much hog cholera in the country this fall.

"Yes," he replied. "There has been a marked increase in the middle-western states compared with last year."

I told Dr. Houck what I had read in the paper and asked him if other diseases might be mistaken for cholera.

"Yes indeed," was his quick reply. "There are other hog diseases very often mistaken for hog cholera. These diseases in some instances not only fool



the hog raiser, but even baffle a good veterinarian until he is able to examine a carcass and thereby make a correct diagnosis."

What are some of these diseases? was my next question.

"There are 5 main ones," he answered. " Here they are.

1. Influenza, or hog 'flu'."
2. Pneumonia.
3. Parasites in pigs.
4. Tuberculosis, and
5. Swine plague.

"Now I'll tell you something about each disease. We'll start with influenza, or hog 'flu'. This disease is very infectious. If there are 50 hogs in the herd, 35 of them may have 'flu' within a few days. It's a fast worker. The hogs are very sick for a day or so and then they generally recover. The death rate for hog 'flu' is very low, say around 3 per cent of the sick hogs. In cholera the death rate often runs as high as 85 per cent of the sick hogs. In 'flu' the hog will have thumps in a very severe form. Thumps are found in cholera only in the very advanced stages of the disease. Is that enough on hog 'flu'?"

I replied that it was sufficient, and he took up the next disease, pneumonia. Here are his remarks on this disease.

"Pneumonia is not a herd disease. Only three or four of a herd of 25 hogs may have the disease. A hog with pneumonia tries to lie down with his breast or brisket on the cold ground. This is generally noticeable. Cholera hogs don't do this; they generally want to sneak off in some place where they can be alone.

"Now the next disease I mentioned, that is likely to be mistaken for hog cholera, is that of worms in pigs. A pig that is full of parasites may act in such a way at times as to appear to be affected with cholera. Or take the case of necrotic enteritis, inflammation of the intestines. The hog does not have a high temperature with this disease while in cholera the temperature is generally high. Necrotic enteritis does not spread rapidly through a herd like cholera or even hog 'flu', but it is a disease that can and does cause a lot of trouble, and interferes with successful immunization against cholera.

At this point Dr. Houck pointed to the picture of a hog with tuberculosis. "That," he said, "is a disease sometimes mistaken for cholera. However, tuberculosis would be in a very advanced stage, the hog would be poor, and wobbly before it would have symptoms, that might be mistaken for cholera. As I have just stated the temperature of a cholera hog is generally high. The temperature of a tuberculous hog is normal or even below."

Leaning back in his chair Dr. Houck said, "Now we'll tackle the last,-- swine plague. This disease is a regular Dr. Jekyll and Mr. Hyde. When you find one you have the other as a rule. Swine plague and hog cholera are nearly always associated, but the cholera symptoms may not be noticed until the carcass is closely examined. Of course the disease in a living hog may be frequently mistaken for cholera, and both diseases are serious and fatal to hogs."

THE  
OFFICE OF THE  
SECRETARY OF THE  
NAVY

WASHINGTON, D. C.  
JANUARY 1, 1900

TO THE  
HONORABLE  
MEMBERS OF THE  
NAVY DEPARTMENT  
FROM  
THE  
NAVY DEPARTMENT

I have the honor to acknowledge the receipt of your letter of the 28th inst.

and in reply to inform you that the same has been forwarded to the proper authorities for their consideration.

Very respectfully,  
YOUR Obedient Servant,  
J. D. LONG  
Secretary of the Navy



"Now Dr. Houck," I interrupted, "What is the average farmer or hog raiser going to do when his hogs are sick and show symptoms of these various diseases?"

"Just suppose," he said, "That a farmer has, say 35 hogs. All these hogs have been vaccinated for cholera for about 6 months. He goes out to feed his hogs some morning and 12 hogs are sick with something resembling cholera. What is he going to do?"

"Well, I don't know what every man would do, but I can tell you exactly what I would do. The hogs have been vaccinated for cholera, and if the job was done right there is very little reason to believe that the disease is cholera. Not knowing then what the trouble was, I would call a reliable veterinarian."

"Why couldn't the farmer diagnose the disease himself?" was the doctor's reply. "You remember I told you in the beginning that some of these diseases not only fool the hog raiser, but at times baffle the veterinarian. A correct diagnosis depends upon a correct interpretation of the history, the symptoms, and post mortem lesions. In order to arrive at a logical conclusion, it may be necessary for the veterinarian to kill a hog and examine the carcass. In such a case only a trained veterinarian would be able to interpret the normal or abnormal conditions of the vital organs and carcass. If hogs are worth feeding, they are worth taking care of. The loss of just one hog might be sufficient to pay the veterinarian to come and make a correct diagnosis. After that diagnosis the veterinarian and the farmer both would know what the trouble was, and what to do, and would not mistake the disease for hog cholera or anything else. Get the facts, and then act accordingly."

This sounded like good logic to me so I closed the interview by asking the doctor about the losses from 'flu' and its treacherous cousin, pneumonia.

"Well," he replied, "both of these diseases are the result of exposure. Some people have funny ideas about a hog, and think it can stand any kind of weather. It can't do it. So far we have had the usual losses from these diseases. Provide hogs with dry, warm, comfortable sheds and modern sanitary surroundings and most of these diseases will be reduced to a minimum. You couldn't blame even a hog for getting sick if he had to stay out in the cold wind, rain, sleet, or snow all night. If he can stay warm so easily, why does he squeal because he has to stay out all night in a cold rain? I would like to sign off by telling the radio hog raisers to keep the best hogs they can afford, keep them comfortable, prevent unnecessary exposure, and provide sanitary surroundings, and hog troubles will not affect the herd greatly."

---ooOoo---

CLOSING ANNOUNCEMENT: Your Farm Reporter has just talked to you about diseases often mistaken for hog cholera. This program came to you through the cooperation of the United States Department of Agriculture and Station \_\_\_\_\_.

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THE UNITED STATES OF AMERICA

IN SENATE

COMMITTEE ON THE JUDICIARY

REPORT

ON THE

PROCEEDINGS



YOUR FARM REPORTER AT WASHINGTON

Monday, Dec. 7, 1931

Crops and Soils

Control of Scale Insects.

**ANNOUNCEMENT:** Your farm reporter at Washington has been to see the specialists of the United States Department of Agriculture about the control of scale insects. That's largely a matter of spraying----All right, Mr. Reporter, whom did you see, and what did you find out?-----

\* \* \* \* \*

Evidently our people who grow plants are becoming spray-minded.

Dr. B. A. Porter, of the division of deciduous fruit insects, points out that nowadays farmers growing peaches, or apples, or plums, or pears, make a practice of spraying every dormant season. Apple or other trees can be sprayed any time during the winter when the weather is above freezing.

In the early days of general infestation by the San Jose scale, it was notably more destructive to fruit than it has been during the last ten to twenty years. That, Dr. Porter suggests is probably partly due to a variety of natural agencies, but perhaps more to the general program of spraying followed by commercial and amateur fruit growers alike.

There are several sprays available, including lime-sulphur, lubricating-oil, and miscible oil sprays. Lime-sulphur has been the main reliance for a good many years. But it is disagreeable to apply, especially during windy weather. The introduction, a few years ago, by the United States Department of Agriculture of lubricating-oil emulsions for spraying has been very popular. These oils are replacing lime-sulphur to a considerable extent since they are cheaper and less disagreeable to apply.

The so-called miscible oils are also effective, Dr. Porter says, but they are usually a little more expensive than lubricating-oil emulsions.

All these different types of sprays can be bought under various trade-names, or the lime sulphur and lubricating oil emulsions can be made up at home. Bulletins have been issued by the United States Department of Agriculture and by experiment stations giving instructions as to the preparation and use of these scale sprays.

Many orchardists in the eastern United States now follow the so-called delayed dormant plan of spraying. That is, they delay the scale treatment until the buds are breaking. Then, by adding nicotine sulphate to the scale spray, they clear the trees of aphids or plant lice, which hatch about that time, as well as control the scale insects.

But in all scale spraying, Dr. Porter emphasizes, very thorough work is needed. Only those insects actually hit by the spray are destroyed.

1. The first part of the report

2. The second part of the report

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11. The eleventh part of the report

12. The twelfth part of the report

12/7/31

However, very satisfactory work can be done with a barrel sprayer. A barrel sprayer will be all that is needed where there are only a few trees to be treated. That is, in small orchards, and in city yards and suburban gardens. Commercial fruit growers usually use power sprays which work at a pump pressure of from two hundred to four hundred pounds.

One application of spray materials to the trees each year, together with the assistance of various natural agencies, has for many years been enough to keep this pest below injurious numbers.

However, he told me to warn you that scale insects vary considerably in abundance from year to year. Fruit growers should always be on the lookout. Any undue increase in the insects should be met by additional spray applications to reduce their numbers.

The San Jose scale is often introduced into a community or a particular orchard or nursery stock, in spite of inspections and other sanitary measures designed to prevent just that thing. After it is once introduced into a neighborhood, it is scattered by the wind, by birds, on the clothes of workmen, and in other ways.

When the insects are abundant the limbs coated by the scales show a gray color as if they had been dusted with ashes. The individual San Jose scale is circular in outline and about the size of the head of a pin. In the center is a little nipple which can be readily seen with a hand lens.

However, if you want to know how to combat it, write for Farmers' Bulletin 1666 on Insecticides. Even though, generally speaking, we are fast becoming "spray-minded" as Dr. Porter puts it, in many instances growers should have more information on the whys and wherefores of spraying. That would contribute to more effective spraying work and would often save them money in selecting materials suited to the work, rather than those designed for use against some different sort of insect.

If a fruit grower does not himself know what insecticide he should buy for treatment of this or that insect, he can hardly expect the salesman at the supply store to know what he should use.

Your county agent or your State experiment station or the United States Department of Agriculture will supply you with information which will enable you to tell what insect is causing your trouble and what insecticide you should use, and how.

It is rarely necessary to destroy a tree that has become infested with San Jose scale. A very severe pruning or heading back followed by spraying will gradually eliminate the pest. Such trees should be stimulated to active growth in the spring by scattering upon the soil under the spread of the limbs from three to six pounds of nitrate of soda, depending upon the size of the tree.

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**ANNOUNCEMENT:** Your farm reporter at Washington has just told you how to control the San Jose scale by dormant spraying. The bulletins mentioned can be had by writing this station---or by writing direct to the United States Department of Agriculture. Ask for Farmers' Bulletin No. 1666, Orchard Insecticides. They are free as long as the supply lasts.





★ DEC 2 1931

U. S. Department of Agriculture

YOUR FARM REPORTER AT WASHINGTON

Wednesday, December 9, 1931.

### NOT FOR PUBLICATION

Speaking Time: 10 Minutes.

### PROGRESS IN THE POULTRY INDUSTRY

ANNOUNCEMENT: Occasionally it's a helpful idea to review our history. A review of the past usually makes us more alert to appreciate new developments and improvements as they come along. Today YOUR FARM REPORTER is going to give us a history lesson, taking as his subject "Progress in the Poultry Industry." Mr. A. R. Lee, Department of Agriculture poultry husbandman, has, as usual, supplied the information. Now... Mr. Reporter.

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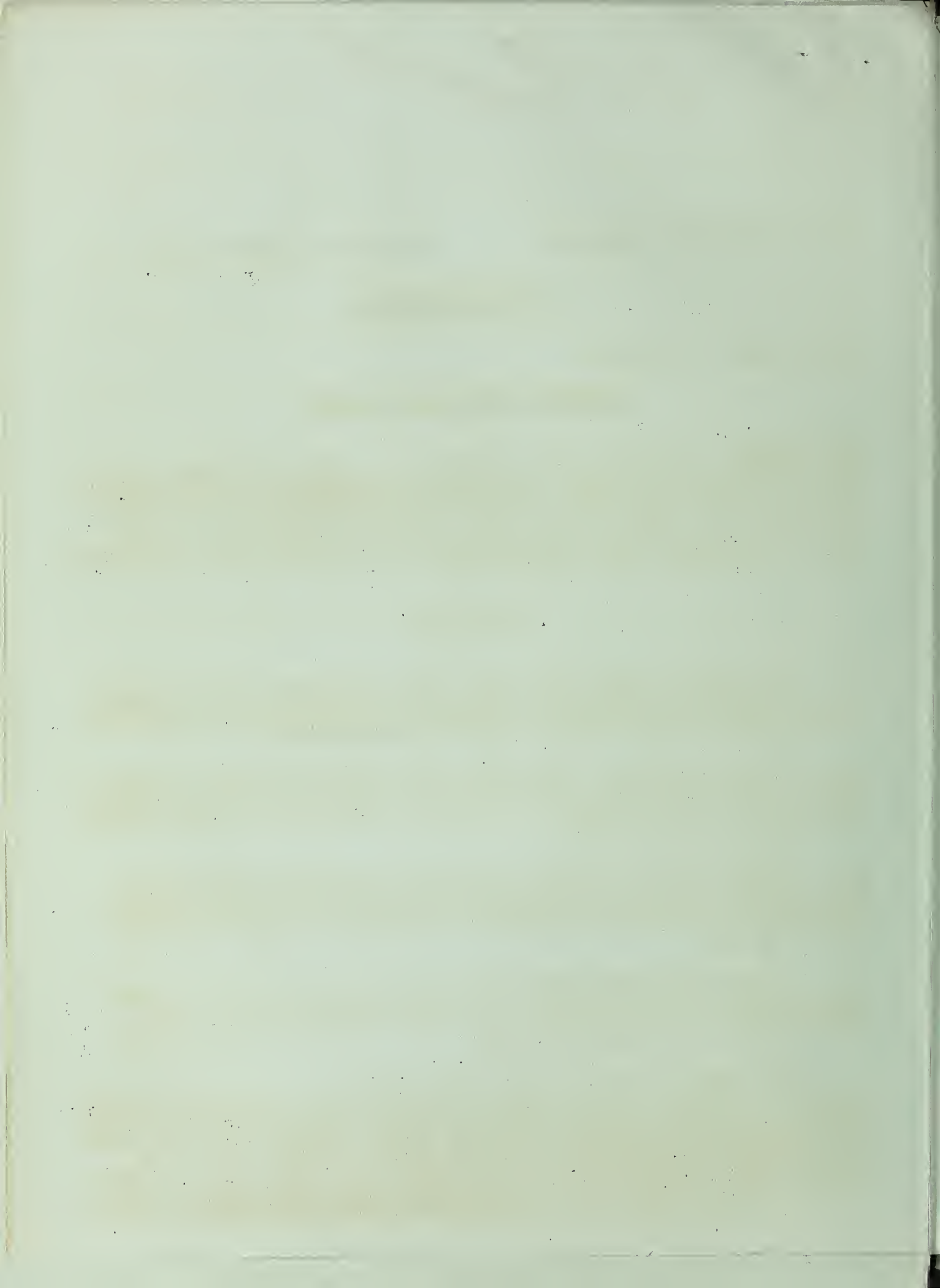
The poultry industry, like other modern institutions, has been greatly affected by scientific discoveries. Most of the progress has been crowded into the rapid-fire developments of comparatively recent years.

There was a time, you know, when poultry raising was largely confined to raising birds for fighting. Cock-fighting was a popular sport in those days. Birds had to be bred for stamina and strength. Practically no thought was given to breeding for egg production.

Going way back to prehistoric times--to the ancient civilization of China and Egypt-- there is evidence that poultry raising was quite extensive. At least we know that they had hatcheries in those days. And the hatchery is an institution that was not developed very extensively in this country until some 25 years ago.

But in those countries very little change occurred in poultry raising with the passing of the centuries. For several thousands years the world thought little of eggs and fried chicken. As our modern psychologists might say, people were not "poultry-conscious."

Well, even in our own country, little attention was paid to poultry farming until 35 years ago. For the most part hens were merely a side issue on general farms. We can all remember when it was general practice to let them forage for themselves and to get along on as little care as possible. Only in the present century has the hen really been recognized as a basic part of our agricultural wealth. And it's within a comparatively short period that the poultry industry has risen to become one of our greatest agricultural assets.





In recounting the important developments of this period Mr. Lee first pointed out that the growth of the poultry industry in the United States has been based on breeding for egg production. That is the main issue. Production of meat is important. But after all, it's secondary.

Hand in hand with the industry's growth, also, has been the development of commercial hatcheries. Artificial methods of incubation and brooding--first used thousands of years ago in Egypt and China, you remember began to come into general use late in the last century. There was some commercial hatching, and some local shipping of baby chicks as early as 1892. However, the hatchery business didn't develop very extensively until about 1908.

By that time incubators had been greatly improved. And even more important--science had demonstrated that baby chicks could be shipped hundreds of miles without injury.

Then, about this same time, colony brooder stoves were introduced. This arrangement made it possible to brood chicks on the range. To supply good brooding conditions along with the best outdoor conditions.

At this point science steps in with a discovery that has done about as much for the poultry industry as any other single contribution. It used to be that chicks could not be raised successfully indoors. Early experiments indicated that chicks had to get out on the ground to grow properly. But scientists found out that it was not the GROUND that chickens needed. What they really needed was sunlight and vitamins,

With this knowledge poultrymen nowadays use cold liver oil to supply vitamins, or ultra-violet rays as a substitute for sunlight. Thus it has become possible, and profitable, to raise chickens indoors at all seasons of the year.

The latest development along this line is the use of battery brooders. These brooders are built in five or six tiers--someone has called them "sky-scraper" brooders. In them chicks are confined at least to broiler age, and in some cases to laying age.

Back of this whole method, you see, is the knowledge that science has given us of the vitamins and minerals necessary for indoor growth. Without this information the method would be an utter failure.

Science has also furnished us with information on feeding, on management, on refrigeration, on disease and on many other questions--information that has been the driving power of the industry's growth.

Take feeding, for instance. Not many years ago a laying hen's ration consisted mostly of wheat and corn. The hen laid most of her eggs in the spring and summer. Now, with their new knowledge of the food elements necessary to egg production--of proteins, minerals and vitamins--poultry raisers can maintain their production pretty well throughout the year. The use of artificial lights in poultry houses has also greatly helped.

Mr. Lee pointed out in this connection that studies of vitamin content of eggs has also added to our appreciation of the value of eggs in the human

Mr. [Name] pointed out in this connection that studies of vitamin content  
also aided to the correlation of the value of eggs in the human

diet. This is reflected in the increased consumption of eggs in the United States.

Did you ever stop to think that a large proportion of both poultry and eggs in the United States is produced hundreds--sometimes thousands--of miles from market? And that it has been only through great progress in poultry packing, refrigeration and shipping that this market demand could be satisfied?

For example, cold storage methods have been developed that make it possible to preserve eggs produced in the spring for use during fall and winter when production is at its lowest point. The importance of cold storage is shown by the fact that over 330 million dozen eggs were so preserved last year.

Every producer, too, can store eggs for his own use by using water glass or limewater as a preservative.

Methods of freezing eggs in cans have been introduced. In this way the dealer can salvage the losses which otherwise would occur from cracked eggs and from second grades not suitable for shipping in the shell.

Some time ago, chemists worked out a method of processing eggs by dipping them in an oil bath. The bath tends to preserve the freshness and quality of the eggs. This idea is being utilized extensively by the egg trade, especially for eggs put into cold storage.

Now, getting back to production again, let's consider for a minute the extremely important matter of culling. Poultry scientists have given to the industry a method of detecting poor producing hens through external characteristics. Probably no other scientific contribution has done any more to raise the average production of both farm and commercial flocks.

The average egg production of the laying flock has also been very materially increased in the past few years by trap-nesting, breeding and by selection of the best producers. The baby chick industry has helped to put pure-bred flocks of bred-to-lay stock on the farms.

When hens are kept in small farm flocks, the effects of disease were not always apparent and often received slight consideration. Commercial poultry farming was not a success however, until veterinarians and research workers discovered methods for controlling and preventing disease. Strict sanitation is the keystone to healthy flocks, for small as well as for large flocks.

The farther we go into it the bigger the subject of "Progress in the Poultry Industry" looms up, doesn't it? My time's about up, and yet I haven't hardly touched breeding, which is the field of many great forward steps in poultry raising, or on new developments in marketing poultry,

Well, it can't be helped. Radio stations like railroads have to operate strictly on schedule. And my time is...up. Good-day.

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ANNOUNCEMENT: Your Farm Reporter at Washington has just been reviewing progress of our great poultry industry. Next Wednesday, you know, he'll be back to talk with poultry raisers again.





YOUR FARM REPORTER AT WASHINGTON

Friday, December 11, 1931

DEC 2 1931

U. S. Department of Agriculture

NOT FOR PUBLICATION

Speaking Time: 10 Minutes.

All Regions.

MAKING SWISS CHEESE IN THE UNITED STATES

ANNOUNCEMENT: And now Station \_\_\_\_\_ presents again Your Farm Reporter at Washington, who is here today with his latest report for dairy farmers. Your Reporter is going to talk about Swiss cheese; or rather, about making Swiss cheese in the United States. This program, as you know, comes to you through the cooperation of the U. S. Department of Agriculture. And now, Your Farm Reporter.....

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You are dairymen---at least most of you are, or you likely wouldn't be listening to a dairy radio program. And so you are a very specialized audience to put this question to. But I'm going to ask it anyway; and here it is:

When you go to the store to buy Swiss cheese, what kind do you buy? What kind do you prefer? Swiss cheese made in America, or cheese imported from Switzerland?

And now, let me ask another question. Which kind would you be willing to pay more for? Would you pay a premium for a cheese because it bears the word "Imported" on its label?

Well, perhaps all this sounds irrelevant. But let's have a look at a few facts about the Swiss-cheese situation.

In recent years the United States has been consuming about 36 million pounds of Swiss cheese each year. Approximately half of this has been imported from Switzerland. And furthermore, there is a tendency for the imports to increase in volume, and at the expense of the domestic Swiss-cheese industry.

Now, how about the price? Well, imported Swiss cheese commands a relatively high price in the American market. In fact, during the first 6 months of this year, quotations on fancy imported Swiss cheese averaged almost 15.0 cents a pound higher on the New York market than fancy domestic cheese.

Why? .... It seems to be a good question. Is it because the American consumer is impressed by that word, "Imported,"? Or is it because imported cheese is of higher quality than our own American-made cheese? Or is it both?





Well, it seems that it is a little bit of both. We can make just as good Swiss cheese in this country as they can in Switzerland, you understand. But it isn't now altogether a question of ability; it is a question of doing it.

Now, I've been telling you, in my own words, what Mr. O. E. Reed, chief of the United States Bureau of Dairy Industry, told me about the Swiss cheese situation. Right here, I want to quote what Mr. Reed said:

"Imported Swiss cheese," he said, "is almost always high in quality, and well-ripened. The swiss do not send their lower grades of cheese to this country. So the American consumer has found that when he gets imported Swiss cheese, he gets high-quality cheese. Some of our domestic Swiss cheese is of just as high a quality as the highest-quality imported cheese; but there are also large quantities of lower-grade domestic cheese on the market.

However, perhaps the most important thing is that we CAN, in this country, make just as good Swiss cheese as they can make in Switzerland.

"Don't think for a minute," Mr. Reed declared, "that the high quality of imported Swiss cheese is the result of the sweet mountain grasses on which the cows feed. Nor is it because of the pure mountain air which they breathe. When our cows are properly fed and cared for just as good cheese can be made from their milk as is made in Switzerland.

"The quality of Swiss cheese depends very largely upon two things. It depends upon the quality of the MILK used; and upon the kinds of bacteria used and the control of bacterial development in the cheese during manufacture and ripening."

Then, Mr. Reed described the process which was worked out, after many years of research work and experimenting, by scientists in the Bureau of Dairy Industry. This is the process which makes it possible to produce just as high quality Swiss cheese in America as is made in Switzerland. The process, known as the pure-culture and clarification method, has already proved to be commercially successful in cheese factories of several states.

In the spring of 1931 the Bureau of Dairy Industry with the University of Wisconsin cooperating, began work in Wisconsin to help the Swiss-cheese makers of that State to apply the best known methods of manufacture. Most of the Swiss cheese made in the United States is made in Wisconsin.

When scientific investigators first began to study Swiss-cheese making, 30 or 40 years ago, they found that the first necessary step was to use the proper types of bacteria. Since then, several varieties of bacteria have been found to be essential in producing the changes that result in high-quality swiss cheese. Scientists of the Bureau of Dairy Industry discovered that at least two entirely different types were necessary. Then they found it was best to grow these bacteria in pure cultures---that is, with all other kinds of bacteria absent---and then, to add a small quantity of each pure culture to the milk just before starting to make it into cheese.

Well, then they made another discovery. They discovered that running the milk through a centrifugal clarifying machine before making it into cheese improved the quality of the milk, for this purpose. This clarification, and

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The first part of the paper is devoted to a discussion of the general principles of the theory of the structure of the atom. It is shown that the structure of the atom is determined by the laws of quantum mechanics, and that the laws of quantum mechanics are based on the principle of the conservation of energy.

The second part of the paper is devoted to a discussion of the general principles of the theory of the structure of the molecule. It is shown that the structure of the molecule is determined by the laws of quantum mechanics, and that the laws of quantum mechanics are based on the principle of the conservation of energy.

The third part of the paper is devoted to a discussion of the general principles of the theory of the structure of the crystal. It is shown that the structure of the crystal is determined by the laws of quantum mechanics, and that the laws of quantum mechanics are based on the principle of the conservation of energy.

The fourth part of the paper is devoted to a discussion of the general principles of the theory of the structure of the liquid. It is shown that the structure of the liquid is determined by the laws of quantum mechanics, and that the laws of quantum mechanics are based on the principle of the conservation of energy.

The fifth part of the paper is devoted to a discussion of the general principles of the theory of the structure of the gas. It is shown that the structure of the gas is determined by the laws of quantum mechanics, and that the laws of quantum mechanics are based on the principle of the conservation of energy.

The sixth part of the paper is devoted to a discussion of the general principles of the theory of the structure of the plasma. It is shown that the structure of the plasma is determined by the laws of quantum mechanics, and that the laws of quantum mechanics are based on the principle of the conservation of energy.

The seventh part of the paper is devoted to a discussion of the general principles of the theory of the structure of the solid. It is shown that the structure of the solid is determined by the laws of quantum mechanics, and that the laws of quantum mechanics are based on the principle of the conservation of energy.

The eighth part of the paper is devoted to a discussion of the general principles of the theory of the structure of the liquid crystal. It is shown that the structure of the liquid crystal is determined by the laws of quantum mechanics, and that the laws of quantum mechanics are based on the principle of the conservation of energy.

The ninth part of the paper is devoted to a discussion of the general principles of the theory of the structure of the polymer. It is shown that the structure of the polymer is determined by the laws of quantum mechanics, and that the laws of quantum mechanics are based on the principle of the conservation of energy.

and the use of the right kinds and amounts of bacterial cultures, tended to reduce the number and increase the size of the characteristic eyes in the cheese, and this also was to be desired. Now, this method is not particularly new. It was developed by the Bureau of Dairy Industry some 12 years ago; and it was first put into commercial use in 1919 in a Pennsylvania creamery, operated under the supervision of the bureau. Swiss-cheese specialists of the Department have also helped to establish the system in factories in Ohio, Wisconsin, and New York.

You see, it isn't entirely a matter of getting knowledge of how to do things better. It is also a matter of putting our knowledge to work.

But, says Mr. Reed, remember also that the FIRST essential is good, clean, high-quality milk. The first important link in the chain which leads to production of high-quality Swiss cheese is the dairy farmer himself--- the man who supplies the raw products.

Remember, also, he says, that even though the cheesemaker can make high-quality cheese, there is no great incentive for him to do his best unless he gets paid more for it. This is why Mr. Reed places much emphasis on the need for grading. He believes that the farmer should get a premium for high-quality milk, as compared to low quality milk; and that high-quality cheese be sold at a price in keeping with its quality.

"The sale of cheese, according to grade, with a suitable price differential for high quality," he declared, "will provide a stimulus for the farmer and cheesemaker to apply the best known methods in their work."

This, of course, is a thought for most everyone in the dairy business --whether you are interested in Swiss cheese or not. It is true whether you sell your milk to a Swiss-cheese factory, to a creamery, or to an American cheese factory, or to a dry-milk plant. Buying and selling on the basis of quality is proving to be a profitable idea both for farmers and for manufacturers.

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ANNOUNCEMENT: Your Farm Reporter has just told you about his interview with Mr. O. E. Reed, chief of the Bureau of Dairy Industry in the U. S. Department of Agriculture. Your Reporter will be back again next Monday, at this same hour, with a report of special interest to growers of livestock.

The first part of the paper discusses the importance of maintaining accurate records of all transactions. It is essential for the business to have a clear and concise record of all income and expenses. This will allow the business to track its financial performance over time and identify areas where it may be able to reduce costs or increase revenue.

The second part of the paper discusses the importance of maintaining accurate records of all assets and liabilities. This will allow the business to track its net worth over time and identify areas where it may be able to increase its assets or reduce its liabilities.

The third part of the paper discusses the importance of maintaining accurate records of all taxes. This will allow the business to track its tax liability over time and identify areas where it may be able to reduce its tax liability.

The fourth part of the paper discusses the importance of maintaining accurate records of all legal matters. This will allow the business to track its legal liability over time and identify areas where it may be able to reduce its legal liability.

The fifth part of the paper discusses the importance of maintaining accurate records of all other matters. This will allow the business to track its overall financial performance over time and identify areas where it may be able to improve its financial performance.



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YOUR FARM REPORTER AT WASHINGTON.

Monday, December 14, 1931

DEC 2 1931

Crops and Soils.

Fire Safeguards for the Farm.

ANNOUNCEMENT: Your farm reporter at Washington seems to be all heated about something today. I don't know what those specialists of the United States Department of Agriculture have been telling him. But I can see by the fire in his eye, he has something important for us today ----- What's on your mind, Mr. Reporter? - - -

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Well, first let me pass on to you a word of warning.

I got this warning from farm fire specialists of the United States Department of Agriculture. It is an old one, but one well worth heeding.

It is simply this: DON'T BURN CANDLES ON CHRISTMAS TREES. And even if you don't use candles, don't use inflammable stuff for decorations.

People are more careful about that than they were a few years back. Yet every Christmas, somebody goes ahead in spite of the warning. Sometimes the grown folks, and sometimes the children get careless, and another happy Christmas is turned to a season of sorrow.

However, Christmas trees are not the only fire hazard. I just mention that now, so you can lay your plans so as to avoid that particular danger. But the figures show that there are many chances of fire on farms, and the expert tell us that there are far more fires on farms than there should be.

There is a bulletin on "Fire Safeguards for the Farm" It is Farmers' bulletin No. 1643, which may be a big help in showing you how to reduce the danger of fire in your home and in other buildings about the place.

It was prepared by three men, each one an expert in his line. One is Dr. V. M. Valgren, who is an economist, and a specialist in the financial side of farm fires. Another is Harry E. Roethe, who is one of the Department's chemical engineers. And the third, is Mr. M. C. Betts, who is an architect with the Department.

Of course, these experts admit there is no way of doing away with all chances of loss by fire. But you take your place or any other place, and you can cut down the chances of fire, they claim.

You know, just taking the money loss, and without counting such losses of lives as those the other night, farm fires in this country cause losses that run up to one hundred million dollars a year. These experts say we could cut

1. The first part of the paper is devoted to a general discussion of the problem.

2. In the second part we consider the case of a single particle.

3. In the third part we consider the case of a system of particles.

4. Finally, in the fourth part, we discuss the results.

5. The first part of the paper is devoted to a general discussion of the problem.

6. In the second part we consider the case of a single particle.

7. In the third part we consider the case of a system of particles.

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11. In the third part we consider the case of a system of particles.

12. Finally, in the fourth part, we discuss the results.

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14. In the second part we consider the case of a single particle.

15. In the third part we consider the case of a system of particles.

16. Finally, in the fourth part, we discuss the results.



that in half. We could actually save fifty million dollars a year, if we put up the proper safeguards outline in this bulletin. -- And then the wife and the kids would also have a much better chance.

As they point out, when your farm building worth, say, \$2,400, burns, you lose \$2,400, unless it is insured. If you are wise, and have it insured to the usual extent of about three-fourths of its value, you lose \$600 and the insurance company loses about \$1,800. On top of that, you have all the inconvenience and loss of being without the building until it can be replaced. And whether the building was insured or not, the nation is poorer by that \$2,400 which went up in flames and smoke. That is, the nation is poorer by that much unless part of the insurance was carried in a foreign insurance company. In that case, it would still be true that the world would be out that \$2,400 represented by your building that burned. Insurance does not create wealth to replace that which is lost. It just spreads the loss out to more people. It is no substitute for fire prevention. These three experts insist that proper fire prevention measures, and simple but effective home fire-fighting equipment, and organized rural fire protection are, as they put it, "essential to rural progress and safety."

What would you do, right now, if fire broke out around the chimney at the top of your roof? I'll wager that a lot of you haven't even got a ladder to get up there. And some of you who have, don't know where it is. Others of you may know where it is; or they are, for it is better to have two; but you are not so certain about the condition. Fighting fire from ladders and roofs is dangerous enough, without taking the risk of using defective ladders. When you see some folks ladders, it is easy enough to understand how that old superstition about walking under ladders got started. Ladders attached to houses may mar the looks of the building, but they have saved many a place.

Then there are fire buckets, and fire barrels. Many small farm fires are put out with a few pails, or pans, or even dippers of water. Many others gain headway, because you can't lay your hand on the pail. It is now where you thought it was, or it is being used for something else, somewhere else on the farm.

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It is/pretty good idea to keep pails filled and ready at convenient points about the place. Mark them "For fire only". There are a number of little things like that you can do to be better prepared for this thing we all hope will never happen to us. But if you really want to know how to protect yourself along these lines, get that Farmers' Bulletin No. 1643.

And let me repeat: DON'T BURN CANDLES ON CHRISTMAS TREES. And don't use flammable stuff for decorations, even if you don't use candles.

You know, the best time to stop a fire, is before it happens.

Fire stopping is a thing to consider in building the walls of the home. By fire stopping, I mean closing all the open spaced in hollow walls at the floor line, so the fire will not pass quickly from one story to another. That means some added cost, and a lot of added safety.

Then there are those chimneys. You know the old story. You have heard it over and over again. "What caused the fire?" "Defective chimney." However,



there are a lot of suggestions about fire-protection construction on the farm in a bulletin of that name. It is Farmers' Bulletin No. 1590.

A house or a barn may be well-protected, but it is almost impossible to make it fool-proof. And these experts say that a large percentage of farm fires are caused by carelessness in the placing and the use of heating and lighting equipment. Stoves, and furnaces, and open fireplaces all should be set up and operated with careful common sense.

Even with all the accidents that have happened, there are still folks who will use kerosene to start the fire with. The history of that is that they often start a bigger fire and start it quicker than they had expected. Then there are the dangers in storing gasoline. Gasoline can be handled safely with proper care -- but don't forget the proper care. And you may find the suggestions in Farmers' Bulletin No. 1643 very helpful on questions of how to handle and where to store.

That bulletin also takes up this question of community fire protection. In recent years, a number of States have enacted laws to encourage and promote organized rural fire protection. If your neighborhood hasn't looked into the possibilities of an honest-to-goodness rural fire department, you may be overlooking an opportunity there.

These experts will show you just how reasonable care and forethought in the removal of needless fire dangers, and a fair degree of individual preparedness, and the availability of community fire protection can prevent a lot of unnecessary hardship and sorrow; and help promote rural progress and well-being.

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ANNOUNCEMENT: Let's repeat the names and numbers of those bulletins. They can be had for the asking. Write for them either to this Station or to the United States Department of Agriculture at Washington, D. C. They are published by the Department. The one on "Protective-Construction on the Farm" is Farmers' Bulletin No. 1590. The one on "Fire Safeguards for the Farm" is Farmers' Bulletin No. 1643.

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U. S. Department of Agriculture

File 2  
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YOUR FARM REPORTER AT WASHINGTON

Wednesday, December 16, 1931.

NOT FOR PUBLICATION

SPEAKING TIME: 9 Minutes.

ALL REGIONS

## GIVE THE CHILDREN LIVESTOCK FOR CHRISTMAS

OPENING ANNOUNCEMENT: For the next 8 or 9 minutes we are going to listen to your Farm Reporter talk about Christmas presents for the boys and girls. Children want something at Christmas,----and most children appreciate something that moves.-----They like action. All right, Mr. Reporter, tell us what to give the children for Christmas.

Well, folks, Christmas will soon be here. That season of the year when we think of roast turkey, mistletoe, holly berries, and Christmas presents, of course. We like to think of giving presents, especially when there are children in the family.

Naturally, Kris Kingle's first thought is about something that will please the children. And so it is with the farm folks -- who are assistants of Kris Kingle.

I remember asking my father one year, what he was going to give me for Christmas. He said he didn't know and asked me what I wanted. Well, I thought this was a good opportunity to ask for a check so I could buy the kind of present I wanted.

"Hm-m, I'm afraid not, Son," he replied. Guess I'll have to give you something I have plenty of. Money's not so easy to get this year, you know.

So he gave me an interest in a flock of hens, provided I'd gather the eggs and feed the birds regularly. And I kept a third of the money from the eggs and fat hens that were culled out for the market.

Well, the memory of that Christmas gave me an idea for this radio talk. And I went out after more ideas.

And it's not so far-fetched to go to the men in the U. S. Department of Agriculture for some hints for Christmas presents for farm children. All of them come from farm families, a good many of them operate their own farms in Virginia or Maryland near Washington, and they thus may lay some claim to a hearing at least on the matter that I questioned them about in preparation for to-day's talk. That matter is whether or not it's worthwhile to give farm animals to farm children as Christmas presents.



In all reverence, one of them pointed out to me that animals for Christmas gifts certainly are consistent with the scene of the first Christmas--the scene so familiar to all of us from the study of the artists' portrayal of the humble stable in the far off Judean hills.

"Such qualities as kindness and gentleness, often are developed by the care of a pet animal," this man commented. "Here, certainly is a most practical manifestation of the Christmas spirit."

"It's wonderful for children and animals to grow up together. They seem to understand, and each helps the other. I knew a 4-H Club boy in Arkansas who received a dog one year for a Christmas present. The next Christmas he was given a calf. The boy and the dog played together constantly for many years. The care of the calf established the boy's interest in growing good livestock. These presents were given at Christmas, but they lasted much longer than the ordinary gift, and all the time they increased in value, both sentimentally, and in actual worth,

"I think animals," said this specialist, "make splendid Christmas presents for children out in the big, open country where there is plenty of room. But parents should be able to answer "yes" to three questions before making such presents:

"First, does the child really love animals?

"Second, will the child provide the animal with shelter and care and proper feed?

"Third, will the child learn useful lessons from care of the animal?"

That seems to me to be horse sense. You can find any number of gifts suitable for children at Christmas time. The problem is to select the gift that will suit the child as nearly as possible, that will last for some time, and give the child the greatest amount of happiness. If the child loves animals and is prepared and willing to take care of them, then a dog, a calf, a colt, a lamb, or a pig make eminently a suitable present. Just be sure that you don't mistake a passing fancy of the child for a real love for animals.

I suppose the best example of the ability of the farm boys and girls to give proper care to animals is the feat of a 12-year old Iowa club boy who fed and prepared for the show ring the grand champion steer at the International Livestock Exposition in 1928. This lad's feat of besting the World's leading stockmen at this exposition couldn't have been accomplished without the expenditure of work and the exercise of judgment that would do credit to the most experienced mature stockman.

"Of course animals would make ideal Christmas presents for many 4-H Club members, but they should be consulted about this matter before any purchases are made. Outside of the 4-H Clubs there are several million other boys and girls on the farms of the United States. Animals would make splendid Christmas gifts for thousands of these, but again the child should be consulted before any purchases are made. It is better for children to want animal pets, and be denied them, than to have and abuse them."





It surely is not right to neglect or abuse livestock. It would be better to give the child some other present in case of doubt.

What kind of an animal should be given a child for a Christmas present?

"A good animal," the Federal stockmen say-- and they say it unanimously and emphatically. "I know a girl in Montana who has a flock of 100 sheep," one man remarked. "She got this flock by gathering up and taking care of orphan lambs unable to make the trip to the range. By adding better ewes, and doing better breeding she has built up a nice flock, but with her love and knowledge of sheep, she could have done much better had she been given the opportunity to start with the strongest and best instead of the weakest.

"Give a child a good animal and the child will be proud of it, and take care of it, but if the present is a scrubby individual, the child may not be so proud nor administer such good care and treatment. Give the child something worth taking care of, and the venture will come closer to success."

One more question still lingered in my mind. Who should get the profit from rearing these gift animals?

The child.

That answer, again, is unanimous and emphatic.

One man told this story: "A farmer I know gave his boy a nice pig. The boy's pig outgrew his father's pigs because it received better treatment. Then slaughtering time came around. The father killed the boy's pig because it was better. The poor kid couldn't eat the meat of his pet, so he got precisely nothing for his work. Now men like that of course are few and far between. But the point I'm making is that any Christmas gift not made in the full unselfishness of the Christmas spirit is not a gift; it is simply a gesture."

These men whom I talked with in the Bureau of Animal Industry and the Federal Extension Service simply made clear what all of us who are raised on farms know. Animals do make suitable Christmas presents for farm children who have a genuine love for livestock, who will be assured that there is plenty of shelter and food on the farm for the animals given, and who have the tenacity of purpose to care for their pets.

After all, Children are only human. Great men and great women and men and women of lesser estate have been and always will be animal lovers. President Roosevelt and his family were famous for the profusion of pets about the White House. Likewise have been our more recent chief executives. Mark Twain's lovable pair of young rural adolescents, Tom Sawyer and Huckleberry Finn, possessed and loved their dogs.

Cats, dogs, sheep, horses, calves and chickens all are desirable Christmas presents for children when presented in the proper manner and under the proper conditions.

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CLOSING ANNOUNCEMENT: You have just heard your Farm Reporter talk about giving children animals for Christmas presents. This program comes to you through the cooperation of the United States Department of Agriculture and Station\_\_\_\_\_.



File 2  
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YOUR FARM REPORTER AT WASHINGTON

Friday, December 18, 1931

DEC 2 1931  
U. S. Department of Agriculture

NOT FOR PUBLICATION

Speaking Time: 10 minutes.

All Regions

STERILIZING DAIRY UTENSILS

ANNOUNCEMENT: The dairy utensil which has not been treated to kill bacteria has a bad reputation. Market milk men say that it is one of the biggest sources of sour milk and low-grade dairy products. YOUR FARM REPORTER has been looking into the matter of caring for dairy utensils. And now he's ready to report. He brings his report to you direct from the Department of Agriculture in Washington.

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If we could just trust our own eyes we'd often think about things differently. But unfortunately the old saying isn't puncture-proof-----Seeing is now always believing.

A magician demonstrated this to my satisfaction not long ago, at a theatre. He pulled six rabbits out of my coat collar while I sat watching him. And he might be taking gold watches out of my ears yet if he hadn't grown tired.

You don't have to go to a show, though, to get a convincing demonstration that you can't believe your eyes. Take two milk pails. Wash and treat one to kill bacteria. Merely wash the second. Now, so far as anyone can see, there's absolutely no difference in them. Both appear clean, spick and span. And yet there may be the greatest difference in the world. The pail which has not been treated to kill bacteria may harbor millions of germs---germs that cause souring, off-flavors and sometimes sickness.

I know a few people who seem to think treating dairy utensils to kill bacteria is something new. But a little remembering tells us that it isn't. Even back in grandmother's time the dairyman who was noted for his good butter was the dairyman who kept his utensils spotless and shining, and who scalded frequently and thoroughly. Nowadays we have new methods and better equipment. But the principle is the same.

I imagine a good many of you still use the scalding, or hot water, method. It's very effective when applied carefully. And many of you use steam. Some of you, perhaps, are now using chemicals. The chemical method is new and interesting, so let's talk about it first.

Mr. C. J. Babcock, one of the Department of Agriculture's market milk men, tells me that the chemical method is proving practical for small dairy farms as well as in larger dairies. The usual agent is chlorine.





Mr. Babcock declared that the most important point when treating dairy utensils with chlorine is to clean the utensils thoroughly first. Free chlorine will attack organic matter before it attacks bacteria. So if the milk can, or other apparatus, is not perfectly clean chlorine will waste its power on this organic matter. By the time it gets around to the bacteria much of its effectiveness will be gone.

The chlorine solution is ordinarily used at a strength of 1 part available chlorine to 10,000 parts water. The Department of Agriculture believes, though, that for ordinary use it's better to have a margin of safety. So Mr. Babcock recommends making the solution stronger---one part to 5,000.

Department chemists dissolve a 12-ounce can of chloride of lime in one gallon of water and filter it into a glass bottle or jar. This is a stock solution. It's kept in a cool dark place. Then, when they're ready to treat the utensils, they make a solution simply by adding one ounce of the stock solution to every gallon of water.

Milking machines were the first dairy utensils to be treated in this way. And now milk plants use the chemical method extensively in bottle washers.

Now, let's return for a minute to the tried-and-true methods of using heat. Experience shows us one common trouble.

Say you're using hot water. Be sure that the water is hot enough so that the utensil cannot be held in the bare hand. And be sure that it stays that hot throughout the process.

The same applies to steam. It's very important that the utensil be so hot that it dries off immediately. Moisture, you know, is an excellent place for germs to grow.

Mr. Babcock told me that to effectively kill bacteria, hot water must be at least 180 degrees. And utensils should be placed in steam, at a temperature of at least 200 degrees, for five minutes.

There are various good methods of applying steam. The kind and amount of equipment depends upon the size of the dairy. Small dairies many times need only very simple apparatus. Larger dairies usually find it economical to install more elaborate equipment.

I haven't time to go into the details of equipment. But I CAN tell you where to get that information if you want it. Farmers' Bulletin No. 1675 on "Care of milk utensils on the farm" is a good place to get it. And there's another bulletin on "Cleaning Milking Machines" that might help. It's Farmers' Bulletin No. 1315.

Besides bulletins, too, the department has blue prints for the construction of a simple steam boiler. And they're free, also.

Now, in the next two minutes let's do a little more remembering. Let's summarize the whole clean milk problem.

As you know, the four essential factors are clean cows, utensils properly treated to kill bacteria, prompt cooling, and use of a small-top pail. Of the four--the second one--utensils--probably has most to do with the bacterial count.

The first part of the book is devoted to a description of the various forms of the verb 'to be' in the different dialects of the English language. It is shown that the verb 'to be' is one of the most important and most varied in the English language. It is used in many different ways, and its meaning is often changed by the context in which it is used.

The second part of the book is devoted to a description of the various forms of the verb 'to have' in the different dialects of the English language. It is shown that the verb 'to have' is one of the most important and most varied in the English language. It is used in many different ways, and its meaning is often changed by the context in which it is used.

The third part of the book is devoted to a description of the various forms of the verb 'to do' in the different dialects of the English language. It is shown that the verb 'to do' is one of the most important and most varied in the English language. It is used in many different ways, and its meaning is often changed by the context in which it is used.

The fourth part of the book is devoted to a description of the various forms of the verb 'to go' in the different dialects of the English language. It is shown that the verb 'to go' is one of the most important and most varied in the English language. It is used in many different ways, and its meaning is often changed by the context in which it is used.

The fifth part of the book is devoted to a description of the various forms of the verb 'to come' in the different dialects of the English language. It is shown that the verb 'to come' is one of the most important and most varied in the English language. It is used in many different ways, and its meaning is often changed by the context in which it is used.

The sixth part of the book is devoted to a description of the various forms of the verb 'to see' in the different dialects of the English language. It is shown that the verb 'to see' is one of the most important and most varied in the English language. It is used in many different ways, and its meaning is often changed by the context in which it is used.

The seventh part of the book is devoted to a description of the various forms of the verb 'to hear' in the different dialects of the English language. It is shown that the verb 'to hear' is one of the most important and most varied in the English language. It is used in many different ways, and its meaning is often changed by the context in which it is used.

The eighth part of the book is devoted to a description of the various forms of the verb 'to know' in the different dialects of the English language. It is shown that the verb 'to know' is one of the most important and most varied in the English language. It is used in many different ways, and its meaning is often changed by the context in which it is used.

The ninth part of the book is devoted to a description of the various forms of the verb 'to think' in the different dialects of the English language. It is shown that the verb 'to think' is one of the most important and most varied in the English language. It is used in many different ways, and its meaning is often changed by the context in which it is used.

It's already been pointed out that utensils which have not been treated to kill bacteria are one of the commonest sources of contamination in milk. This applies to the pail, the cooler, the can, the various apparatus at the milk plant, and to the final containers--cans and bottles. Mr. Babcock says it applies most of all to final containers.

The reason is, of course, that people often return milk bottles that contain many bacteria. They may have been washed. And they look clean. But very often they really aren't. Sometimes, if the washing hasn't been thorough, there'll be small streaks or spots that contain thousands, even hundreds of thousands, of bacteria.

So that's why it's absolutely necessary both to wash thoroughly and treat to kill bacteria all dairy utensils thoroughly if you're going to produce clean, high quality milk--the kind of milk that brings premium prices. Neither washing nor treating is sufficient alone. They must go together.

And remember---if you use hot water be sure that the temperature of the water is at least 180 degrees. If you use steam the temperature must be at least 200 degrees. And keep the utensils there for five minutes. For the chlorine treatment the formula is one part of free chlorine to 5,000 parts water. Keep the utensils in the bath for three minutes.

And then--remember this also. AFTER treating to kill bacteria be sure to protect all vessels from contamination. Otherwise it is a waste of time.

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ANNOUNCEMENT: That was YOUR FARM REPORTER, winding up another week of interviews with Department of Agriculture specialists. If you want copies of the bulletins he mentioned, or if you want the steam-boiler blueprints, write him. He gets his mail at Station\_\_\_\_or at the Department of Agriculture in Washington. The bulletin numbers, again, are: Farmers' Bulletin No. 1675, "Care of Milk Utensils on the Farm." and Farmers' Bulletin No. 1315, "Cleaning Milking Machines."





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YOUR FARM REPORTER AT WASHINGTON,

Monday, December 21, 1931

Crops and Soils

Home Mixing of Fertilizers.

ANNOUNCEMENT: We are now ready for another report from your Farm Reporter at Washington. We asked him to inquire about home mixing of fertilizers. Some say mix fertilizers at home. Others say buy ready-mixed fertilizers--- Well, Mr. Reporter, what do the specialists of the United States Department of Agriculture say about it?-----

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Home mixing of fertilizers is a perfectly satisfactory way of using fertilizer materials. Ordinarily, so is buying fertilizers ready-mixed very satisfactory. The farmer who mixes his own is not going to buy poor materials to mix. And most fertilizer manufacturers put good materials into their mixed goods.

By way of introduction, that is the way Dr. C. C. Fletcher, of the Fertilizer Investigations of the United States Department of Agriculture, stated the situation.

"Then, why mix at home at all?" I asked him.

"Well, the principal reason for mixing at home," he explained, "is the saving in cost. When there is no saving, there is no real incentive for the farmer doing the extra work. For home mixing is extra work.

"It will usually be found, however," he went on, "if the farmer is offered a complete fertilizer carrying so many pounds of nitrogen, phosphoric acid and potash and will get the same amount of those materials and mix them himself, he will make a substantial saving of money.

"Of course, he should make a saving by mixing at home, because it will mean extra work to home mix his fertilizers. To effect this saving he must do that work when he has plenty of time to do it; in many cases, when he would otherwise be idle."

Aside from this question of saving money, Dr. Fletcher pointed out that there will always be a few people who will want to mix their own fertilizer for the educational value of it. That is, they want to mix their own so as to find out just what the different fertilizer materials are like.

True, some fertilizer companies use open formulas. The exact nature of the materials is printed on the bags or on the tags, so the farmer using the fertilizer can know just what is in the goods. Many fertilizer companies, however, confine the information given to the simple statement of the proportions of nitrogen, phosphoric acid, and potash without showing the materials used to supply these chemical elements.



Sometimes, two fertilizers, containing the same total proportions of the main chemical ingredients, may be made up of different materials which supply the chief plant foods in somewhat different form and so, may have a different effect on plant growth.

For this reason, farmers who are trying out the results of scientific fertilizer experiments on their own farms must often know the exact nature of the materials used in the mixture. Because of the failure of many companies to supply such information with their goods, many farmers who are inclined to conduct some experiments of their own, prefer to mix their own materials to make sure that they know the exact form in which plant-food materials are present.

The mixing of the materials is comparatively simple. Any tight floor or wagon box may be used, and whatever tools you have on hand. Spread the materials in layers, spreading the most bulky first. Then shovel them together thoroughly. Pass the mixture through a screen and break up any lumps with a tamper or the back of a shovel.

Dr. Fletcher says he uses a very large long-handled mortar hoe for mixing, but there is no need to buy such a hoe if you don't have one. Use something else. If you need to mix large amounts, it might pay to buy a small rotary mixer such as is sold for concrete mixing on the farm. Mix until the materials is fine and uniform. Then bag it and store it in a dry place until you need to use it.-----

Another thing. One of the new tendencies in the use of fertilizers is the use of concentrated materials. Such materials, Dr. Fletcher said, are no better than the standard fertilizer materials. Owing to the decreased cost of freight, however, the concentrated fertilizer can often be bought for less per unit of nitrogen, phosphoric acid, and potash.

The concentrated fertilizer may be hard to distribute with the machinery most farmers now have. But he suggested that you can get around that by mixing concentrated fertilizers with some filler at home before putting the fertilizer on the land.

Some fillers have fertilizer value. You might use dried peat or cotton seed meal; or you might use some inert substance such as sand. What is best to use will depend largely on what is available in your particular community.

The home mixing of concentrated fertilizer with some filler readily available in your locality to dilute it, as it were, will often enable you to use concentrated fertilizer in the same way as standard fertilizer without having to buy new machinery or without having to take special care in distributing the concentrated fertilizer.

A special case, mentioned by Dr. Fletcher is that of the farmer who has plenty of poultry manure and wants to use it as a substitute for commercial fertilizer. Poultry manure may be a fine base for fertilizer when it is dried and pulverized. The dried and pulverized poultry manure may be mixed with fertilizer chemicals and the resulting mixture be equal to the fertilizer mixtures often selling for much more money.

But in all this mixing business, Dr. Fletcher warns that it is best to get all the information you can on this matter. Home mixing of fertilizers is





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a matter that calls for real intelligent study on the part of the farmer. You can probably get information on home mixing from your county agent or from your state experiment station. The United States Department of Agriculture also has a publication on this subject, which may be had for the asking. Ask for Home-Mixing of Fertilizers. And address your request to the Bureau of Chemistry and Soils of the United States Department of Agriculture.

ANNOUNCEMENT: You may get further information on the subject of home mixing of fertilizers from the United States Department of Agriculture. The Department in cooperation with Station\_\_\_\_\_ will be glad to send you a copy of Leaflet 70-L, "Home Mixing of Fertilizers."

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DEC 17 1931

U. S. Department of Agriculture

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YOUR FARM REPORTER AT WASHINGTON

Wednesday, December 23, 1931

NOT FOR PUBLICATION

Speaking Time: 10 Minutes

All Regions

## MODERN EQUIPMENT FOR THE POULTRY HOUSE

ANNOUNCEMENT: Here's YOUR FARM REPORTER, now. For today's poultry program he's going to talk about modern equipment for the poultry house. Mr. A. R. Lee, Department of Agriculture poultry husbandman, has given him some tips that may interest you. Let's hear them.

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All of you are more or less familiar with the whys and wherefores of good poultry house equipment. So Mr. Lee suggested that we make this a sort of checking-up program. How much of what you know about the best ways of equipping a poultry house are you actually putting into practice? As I go over the items pointed out by Mr. Lee you can check up and see.

First, though, we might go back to the beginning and review the reasons why up-to-date equipment is essential to getting highest profits out of raising poultry.

For one thing, it's practical for the same reason that piping water into the kitchen is practical. It saves labor. And it is convenient. GOOD equipment is easy to clean. It makes proper sanitation a comparatively easy matter. And that's another reason why it's essential.

Then, a third purpose in furnishing the poultry house is to increase feed consumption of laying hens and pullets. As you know much better than I do, the big object in feeding layers is to get them to eat as much as possible. And they'll eat more if feed hoppers are conveniently placed and kept clean.

Now for our check-up. What comes first? Roosts, I suppose. But practically every poultry house has roosts, so we can check them off right away. Let's take dropping boards first. Not all poultry raisers use them. Yet they are very necessary fixtures in the poultry house, too. Necessary, that is, if the house is to be kept clean without an undue amount of labor.

The modern poultryman has also found it advisable to nail 2-inch mesh wire on the under part of the roosts. That prevents hens from getting on to the dropping boards and scratching there.

Next on my list of poultry-house equipment, I guess should come nests--- CLEAN nests. As you know, the standard requirements are that one nest be provided for every five hens and that the nest be at least 14 inches square. But the important thing is to make the nest easy to clean. The litter has to be changed frequently. Using half-inch hardware cloth for the bottom of nests aids





And many poultrymen save labor by building in a tier against the wall, using the wall as a back for the nests. Then, the nests can be pulled away from the wall and litter dumped out the open end.

As the third item, let's take the mash hopper. Mr. Lee declared that keeping dry mash before hens all of the time is one of the most practical ways of increasing egg production. The requirements of a good mash hopper? Well, it should prevent waste, keep the mash clean, be easy to clean, and to fill, and provide the laying hens with a constant supply of mash. As to size, one running foot of length to every 8 hens is about right. Then most of the hens can eat at one time. Of course the hopper should be arranged so that hens cannot roost on it, thus getting the feed dirty and wasting it.

In the past, large wall mash hoppers have been popular. But nowadays they're being replaced on many farms with open-reel box hoppers. These hoppers are made like an open box, about 5 inches deep and 10 inches wide. And they have a revolving rod on top of the hopper to keep hens from walking or roosting on the box.

If you're interested, by the way, you'll find plans of the open-reel box hopper in Farmers' Bulletin 1554, entitled "Poultry Houses and Fixtures." And this bulletin also gives plans for nests and much of the other equipment that I'm mentioning today. Your State College probably has Mash hopper plans, too, that are being used extensively in your own State.

Getting back to the subject, we might take a moment for the open-trough feeder, which is usually used for moist feeds such as moist mash, condensed buttermilk green feed and scratch feed. Separate hoppers or sections of hoppers have to be provided for oyster shell and limestone grit.

This brings us to the question of watering arrangements. The essentials here are that the vessels be easy to clean, that they be located where they will KEEP clean, and that they be big enough. A point to emphasize here is that merely emptying the pans and adding fresh water doesn't keep them clean. They have to be scrubbed out.

The necessity of clean drinking water in preventing disease from spreading rapidly through the flock is so well known that we won't dwell on it. We might extend our checking-up, though, to the KINDS of water containers.

Galvanized pails or large pans make desirable water vessels for laying hens. Set them up about 2 feet above the floor of the pen on either a slat or wire platform--high enough so that floor litter cannot be scratched into them.

Naturally one of the main things to look out for is to keep the space around water containers dry. Damp litter in the poultry house is very undesirable.

As containers of milk, galvanized pans aren't so good. They are affected by the acid in the milk. So wooden troughs or earthenware fountains for milk, of course, must be kept strictly clean and given frequent scaldings.

To keep water from freezing in cold weather either electric or oil heaters, placed under the water vessels, are satisfactory. Great care must be taken with oil heaters, though, to avoid danger of fire.

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The first part of the paper is devoted to a general discussion of the problem of the origin of life. It is shown that the problem is one of the most important and most difficult in the history of science. The author discusses the various theories of the origin of life, and shows that the most plausible is the theory of spontaneous generation.

The second part of the paper is devoted to a detailed discussion of the theory of spontaneous generation. It is shown that this theory is based on the fact that life is a complex of many different parts, and that these parts are all derived from a common ancestor. The author shows that this theory is supported by the facts of the history of life, and that it is the only theory that can explain the origin of life.

The third part of the paper is devoted to a discussion of the evidence for the theory of spontaneous generation. It is shown that the evidence is of two kinds: first, the evidence of the history of life, and second, the evidence of the experiments of modern science. The author shows that the evidence of the history of life is in favor of the theory of spontaneous generation, and that the evidence of the experiments of modern science is also in favor of the theory of spontaneous generation.

The fourth part of the paper is devoted to a discussion of the objections to the theory of spontaneous generation. It is shown that the objections are of two kinds: first, the objections of the philosophers, and second, the objections of the scientists. The author shows that the objections of the philosophers are not valid, and that the objections of the scientists are also not valid.

The fifth part of the paper is devoted to a discussion of the conclusions of the paper. It is shown that the theory of spontaneous generation is the only theory that can explain the origin of life, and that it is supported by the facts of the history of life and the evidence of the experiments of modern science. The author concludes that the theory of spontaneous generation is the correct theory of the origin of life.

The sixth part of the paper is devoted to a discussion of the implications of the theory of spontaneous generation. It is shown that the theory of spontaneous generation has important implications for the study of the history of life, and for the study of the origin of life. The author shows that the theory of spontaneous generation is a key to the understanding of the history of life, and that it is a key to the understanding of the origin of life.

The seventh part of the paper is devoted to a discussion of the future of the theory of spontaneous generation. It is shown that the theory of spontaneous generation is a theory that is still in the process of development, and that it is a theory that is still in need of further evidence. The author shows that the theory of spontaneous generation is a theory that is still in the process of development, and that it is a theory that is still in need of further evidence.

The eighth part of the paper is devoted to a discussion of the importance of the theory of spontaneous generation. It is shown that the theory of spontaneous generation is one of the most important theories in the history of science, and that it is one of the most important theories in the study of the origin of life. The author shows that the theory of spontaneous generation is a theory that is still in the process of development, and that it is a theory that is still in need of further evidence.

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Artificial lights are used very extensively in poultry houses to lengthen the working day of the hen during the fall and winter. No up-to-date poultry farm can afford to be without lights in the laying house.

In many large poultry houses automatic watering devices are not being used, especially in sections where winters aren't very severe. The automatic system is particularly useful on range, where the flow of water can be regulated by a float and where some simple provision can be made to take care of overflow and drainage.

One thing that every farm flock should have is a broody coop, where hens can be placed as soon as they go broody when they are not wanted for setting. Plans are given for broody coops in Farmers' Bulletin 1554. The coops can be made of wire and slats and placed either on the inside wall of the house or at one end of the dropping boards.

Then, of course every poultry house should be equipped with a catching hook, for catching sick hens or for picking out birds for marketing and eating. This saves a lot of time. A hook generally used is made of heavy wire, about 4 feet long, bent to form a handle at one end and a hook at the other.

One more suggestion---It's about feeding leafy alfalfa hay, which is an excellent addition to the poultry ration. Alfalfa hay is fed to best advantage in a cylindrical frame, made of poultry netting, about one foot in diameter and 3 feet high. The frame may either be set on the floor or fastened to the side wall.

There are numerous other pieces of equipment that might be used in the poultry house--and used profitably. But practically all those I've mentioned today can be made at home. Home-made equipment, if made carefully, will meet all the requirements. And, it is inexpensive.

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ANNOUNCEMENT: That was YOUR FARM REPORTER, reviewing the essentials of equipment for the modern poultry house. If you want to continue the checking-up process he started today write for that bulletin. It's Farmers' Bulletin No. 1554, "Poultry Houses and Fixtures." Write YOUR FARM REPORTER at Station\_\_\_\_\_or at the Department of Agriculture in Washington.

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The first part of the paper is devoted to a discussion of the general principles of the theory of the structure of the atom. It is shown that the structure of the atom is determined by the laws of quantum mechanics, and that the laws of quantum mechanics are based on the principle of the conservation of energy.

The second part of the paper is devoted to a discussion of the experimental results obtained in the study of the structure of the atom. It is shown that the experimental results are in good agreement with the theoretical predictions of the theory of the structure of the atom.

The third part of the paper is devoted to a discussion of the applications of the theory of the structure of the atom. It is shown that the theory of the structure of the atom has many important applications in the fields of physics, chemistry, and biology.

The fourth part of the paper is devoted to a discussion of the future of the theory of the structure of the atom. It is shown that the theory of the structure of the atom is still in the early stages of development, and that there are many important problems that need to be solved in the future.



DEC 27 1931

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YOUR FARM REPORTER AT WASHINGTON

Friday, December 25, 1931.

NOT FOR PUBLICATION

Speaking Time: 9 Minutes.

All Regions.

LIVESTOCK REMEDIES

OPENING ANNOUNCEMENT: Last Monday your Farm Reporter told how hog cholera was discovered, how much it has cost hog raisers, and finally how modern science has brought the disease under control. Today the Reporter is going to discuss Proprietary Livestock Remedies. Are these remedies good? Are they bad? What purpose do they serve? Listen to the talk and then be your own judge. All right, Mr. Reporter, here's the 'mike.'

---oOo---

One time there was a little boy sick with blood-poisoning. All the doctors in the community has attended the case, and every reputable scientific remedy has been tried. The child grew worse. Death seemed inevitable. A "quack" remedy was brought in, but the leading doctor said it should not be used because it might upset the good work of some of the known medicine already in the child's system. The doctor was not guessing. He knew, from years of scientific research and experimenting, that the medicine he had given the child should have a favorable effect. It did. In a few hours the child showed signs of improvement, and finally recovered. This child owed its life to that doctor who stood by what he knew was right rather than guessing.

Your own Uncle Sam up here in Washington is playing the role of doctor for you every day by efficiently managing the Food and Drug, and Insecticide Administration of the United States Department of Agriculture. A score of well trained doctors, chemists, pharmacists, and other scientific men kept a close eye on nearly everything you eat. It is their business, among other things, to see that packages are not misbranded. If the label reads "Maple Syrup," then it's against the law to put any adulterants in the can bearing that label. If the label reads, "Cane Sugar Syrup Flavored with Maple" the law requires that the can contain just that. Uncle Sam's Food and Drug Workers are always watching these labels and examining the contents of the containers to see if they check out all right. When they fail to check out as they should, appropriate steps are taken to correct the situation, and I am informed that misbranding and adulteration is rapidly declining as a result of this campaign which involves confiscation of illegal merchandise and criminal prosecution when necessary.

Not only do Uncle Sam's scientists look out for us, but they keep watch



over the proprietary livestock remedies sold to raisers of cattle, horses, hogs, sheep, poultry and dogs. I thought some information on this subject would interest livestock people over the country generally so I went over and had a talk with Dr. H. E. Moskey, Veterinarian for the Food, Drug, and Insecticide Administration. He keeps an eye on everything that is sold which is supposed to cure some ailment in livestock. He watches the label on boxes containing horse powder, dog biscuits, cow medicines, chicken remedies, and every proprietary livestock remedy. I asked Dr. Moskey to give me a little education along this line of livestock remedies, and he opened up in this way.

Many manufacturers of veterinary preparations are honest and reliable. These men make every effort to label their products properly. Some firms, however, either through dishonesty, ignorance, or carelessness sell medicines bearing false and fraudulent claims on their labels, for example - "Here is a package of cow powder, the label reads 'Good for sour stomach, indigestion, garget, constipation, cramps in the stomach, wind colic, diarrhea, fever, sluggish liver, distemper, scours, and is a good regulator.'" Across the side of this can in large red letters I read the following--- "A MONEY SAVER AND A MILK PRODUCER." This certainly sounded like a great cow powder so I asked Dr. Moskey what about it.

"It can't possibly cure all the troubles named in that label, and we are taking active steps to take this product under its present labeling off the market," was the doctor's reply. Continuing, he said, "This 5 pound can sells for \$5.00. I don't suppose it has over 50 cents worth of chemicals in it. A farmer buying such a remedy is wasting his money, time and effort, for no known drug, or combination of drugs, can do what this label claims."

Are there any drug remedies for hogs on the market now? I asked the doctor.

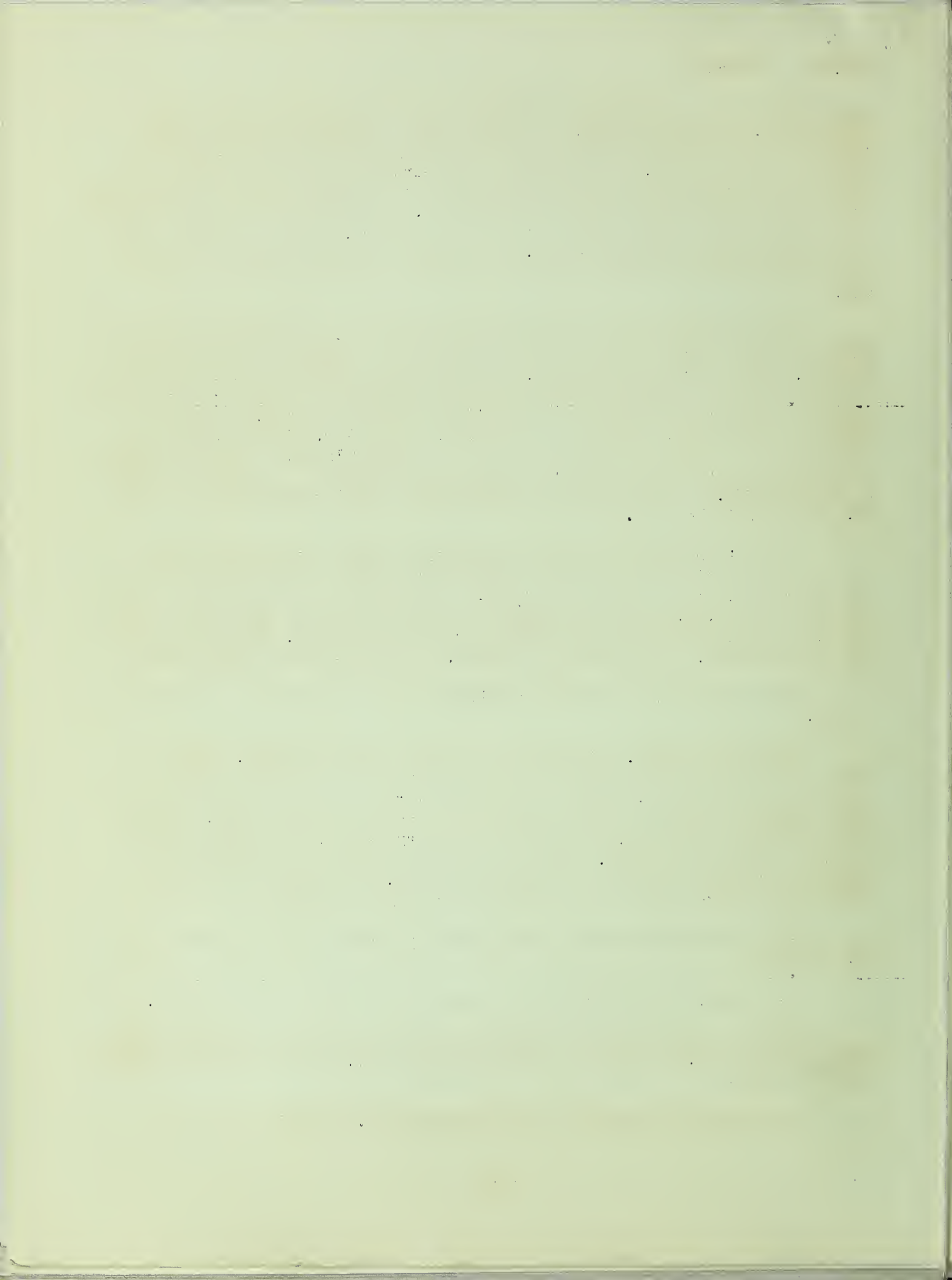
"Yes," he replied. "There are too many in some sections. The Corn Belt produces lots of hogs and there are plenty of drug remedies made and sold up in that section. Some of these have merit for certain conditions but many products we are now investigating are a waste of money to buy. Provide hogs with the proper feed, keep them in sanitary places, and many of these remedies will not be needed. Here is one that is supposed to cure hog flu, necrotic enteritis and clean the animal of worms. You might just as well feed the hog common salt for the good this remedy will do."

Tell me about some fake horse remedies you have come in contact with, Dr. Moskey.

"All right," he answered as he reached for a box of horse powders.

"Here is a powder that is supposed to cure a horse of influenza, distemper, and heaves." Will it do it? I quickly asked. "No," was the doctor's emphatic reply.

Do you have any trouble with dog remedies Dr. Moskey?





"Yes siree--- plenty of it," was his convincing reply as he pointed to a long row of bottles and boxes on the shelf. "Those contain various dog remedies made and sold all over the country where they have dogs. That remedy in the big red box is supposed to cure dogs of distemper, black tongue, and running fits. The one in the green bottle is supposed to cure dogs of any and all kinds of worm troubles."

Well, what about them?

"Well," said the doctor, "here is the trouble with these remedies. There is no known drug or combination of drugs that will cure all these troubles. We are insisting that the manufacturers quit making such false statements about what their remedies will do. For example, if a remedy is good for large round worms or ascarids in a certain animal, then the manufacturer should say so on the label. The same remedy would not be effective for another kind of worms, so it would be misleading and wrong to allow the label to state that this remedy is good for cleaning the animal of all worms. Our efforts are directed toward securing the truthful labeling of medicines."

Going over to a shelf Doctor Moskey pulled down a large black and white box covered with big red letters. "This," he said, "is a remedy for abortion in cattle. It is supposed to cure it, stop it, and do everything. Now as a matter of fact, veterinarians know of no drug or medicine that will cure this costly livestock ailment. This product is an out and out fake."

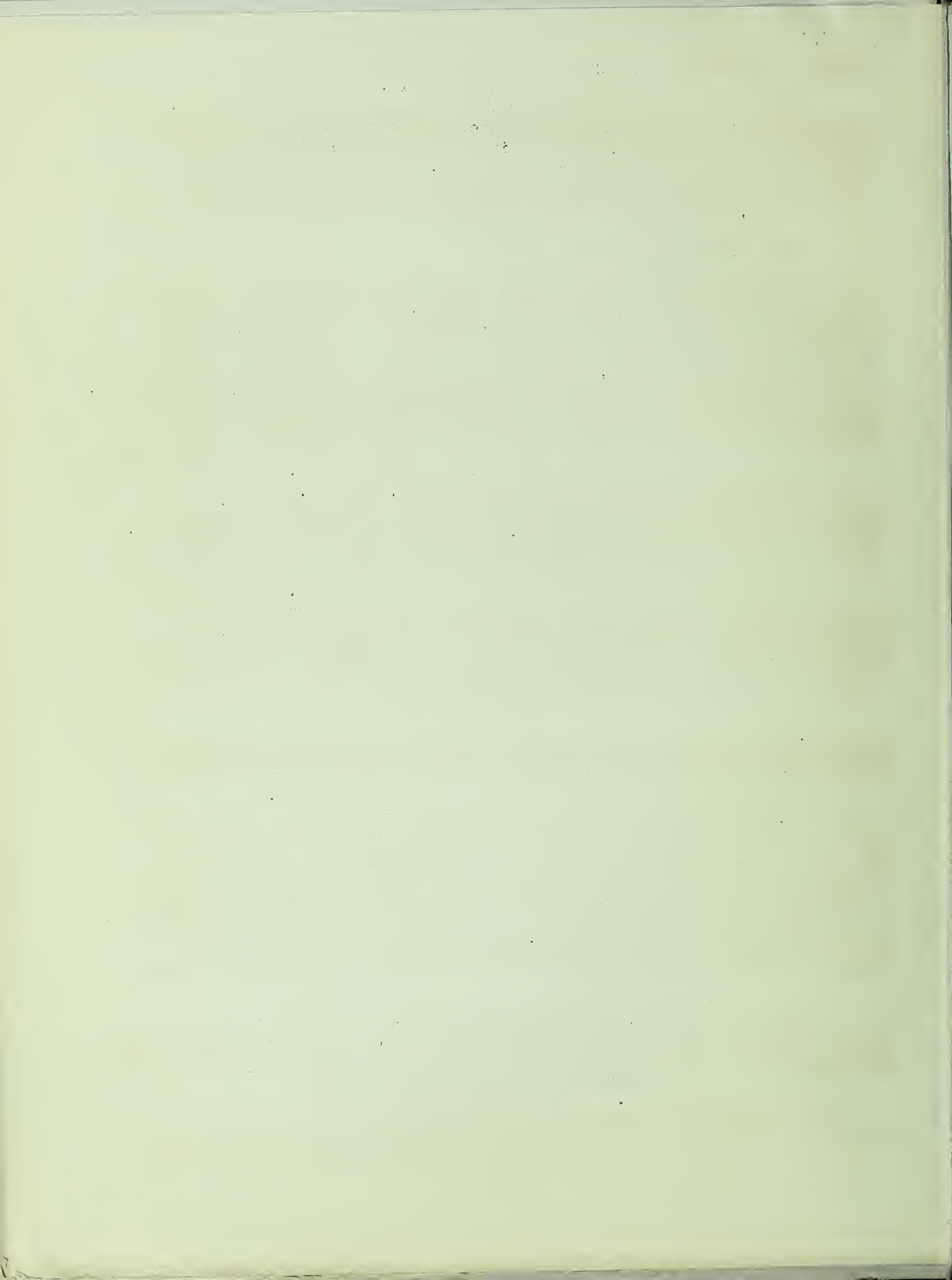
I asked Dr. Moskey what section of the country bought and used largely of these remedies, and he replied, "All sections. In the Corn Belt it's hog remedies, in the East it's dairy cattle treatments, on the Great Plains it's cattle and sheep remedies, on the Pacific Coast it's chicken remedies, and in the South it's dogs and chickens."

At this point I asked the doctor what specific things his department had done to bring about a better condition in this livestock remedy field. He put his reply in this way --

"During the past few years the Administration has taken active steps against products labeled for contagious abortion in cattle, hog cholera, hog flu, necrotic enteritis in hogs, and worm remedies. In fowls we have had to take steps against remedies labeled for cholera, diarrhea of chicks, coccidiosis, roup or diphtheria, chicken pox, gapes of chicks, and blackhead of turkeys. It has been necessary to take action against remedies labeled to cure distemper in dogs, black tongue and running fits. For horses we have been clamping the lid a little tighter on some of the labels for curing distemper, influenza, and heaves."

"One remedy that was chased off the market was composed of brown sugar and wheat bran. It sold for 50 cents per pound and cost about a nickel. This company sold about \$15,000 worth of this remedy every month. In this case the Administration is saving dairymen at least \$180,000 a year."

"We recently had a general worm remedy come into the laboratory for inspection and analysis. It was supposed to get rid of all kinds of worms."



Upon examination the remedy was found to be composed of 95 per cent of water and had in it no medicine or drug effective against any type of worm, in poultry, or any other animal."

"Unfortunately," Dr. Moskey stated "our law does not give us any authority to correct the advertising matter which does not accompany the package. Some manufacturers correct their labeling to meet the requirements of the law. These same manufacturers very often advertise their products in most extravagant and unwarranted terms. We are powerless to correct this type of fraud when it is taken to the public through farm papers, newspapers, over the radio, and through circulars, booklets, etc. distributed by the salesman."

In conclusion, Dr. Moskey gave me to understand, that they were not making any fight against legitimate manufacturers of livestock medicines and there are many of them, so long as the manufacturers label their products truthfully.

I told you in the beginning, that you are to be the judge, and now I'm going to leave the matter in your hands. Your Uncle Sam up here in Washington will keep right on playing the role of doctor and checking on the things you and your livestock eat and use as medicine.

The Department has prepared notices on fake livestock remedies, worm expellers, and dog medicines. These can be secured by addressing the Farm Reporter in care of this station, or send your request direct to the United States Department of Agriculture, Washington, D. C., and it will have prompt attention.

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ANNOUNCEMENT: You have just heard the Farm Reporter tell about proprietary livestock remedies, and what Uncle Sam is doing to protect the men and the horse in this country. This program comes to you through the cooperation of the United States Department of Agriculture and Station\_\_\_\_\_.





DEC 22 1931

YOUR FARM REPORTER AT WASHINGTON.

Monday, December 28, 1931

Crops and Soils

Changes in Diet and Farm Land.

Speaking time: 10 minutes

ANNOUNCEMENT: Your farm reporter at Washington has been to the specialists of the United States Department of Agriculture again. Now he will report to us what they have told him. He tells me he found out that changes in the diet of our American people have had quite an effect on our use of land---But he will tell you about that---Well, Mr. Reporter?-----

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This holiday season is usually a time of feasting.

More folks have food on their minds, even though it may not be mind-food, than at most any other time of the year. At least, that would be my guess.

But Dr. O. E. Baker reminds me that we don't eat like we used to. A lot of us have changed our diets.---And by diet I don't mean any of this "let's-get-thin" faddery.

Of course, as your thoughts skip back to your Christmas dinner or ahead to the New Year spread, you may find that, in your individual case, you ate about the same kinds of food you used to eat; say, before the World War.

Taken by and large, however, there has been considerable change. Dr. Baker, who, you know, is an economist of the United States Department of Agriculture, pointed out to me just where we have changed. From his figures of the total consumption of the different kinds of food stuffs in this country and the total number of people, he is able to get a pretty fair idea of what changes we have made by comparing figures for the different years.

The average one of us, he says, now eats nearly a sixth less wheat, and only half as much corn, and other cereal grains as we did before the War. On the other hand, the average American eats more than a third more sugar, probably a fourth more milk and dairy products, possibly a fifth more vegetables, and, until recently, a little more meat.

There doesn't seem to be so much difference in the total amount of meat as in the kinds of meat we eat. We eat much less beef and much more pork than we did.

Just why we have changed is quite another question. In fact, from what Dr. Baker tells me, it is quite a number of other questions. But aside from any causes which may or may not have operated to make us eat a little less of



one kind of food and a little more of another, the facts remain that our folks eat differently than they did.

And when you stop to think of it, it is not surprising that the changes in our eating should have changed our need for farm lands. Different kinds of stuff require different amounts of land to produce them.

As Dr. Baker says, if a man could live on sugar alone, it would only take about a third of an acre of sugar beets or sugar cane to give him the same amount of energy he gets from the food he eats now. On that basis, it would take three-fourths of an acre of corn or potatoes. It would take an acre and a half of wheat or tomatoes to do the same thing.

Of course, nobody is figuring on going on any such lopsided diet.

Figuring that same way, it would take over three acres if our mythical average man ate only pork and lard. Of course, he couldn't do that.

Milk, however, is a more complete food. A man might actually be able to live for some time on milk alone. You might say, we have all done it at times. To produce the feed for the cow to produce the milk for the man would take two and a third acres of crops and one and two-thirds acres of pasture. And if instead of milk that exclusive diet was beef and veal, it would take 11 acres of crops and two and a half acres of pasture, to feed one man.

So you understand, it makes considerable difference what a man eats as to how much land it takes to feed him.

It takes more land for a diet based largely on meat than for one based on wheat or corn.

Well, you say, that's all very nice. But maybe you are one of those hard-headed fellows who wants to know just how much land it actually does take to feed most any one of us.

Dr. Baker says it takes over two acres of crops to feed the average American. It takes only one acre of land to feed the average German. Only one-half acre to feed a Chinese, and only one-fourth of an acre to feed the average Japanese. He points out that except for the difference between China and Japan, where the difference is due to much higher crop yields in Japan, these variations in amount of land needed to feed one person are due principally to differences in diet.

But let's go back to our original proposition. Dr. Baker has calculated the effect the actual change in our national diet has had on the use of our land.

You recall he said we eat less wheat and other cereal foods. We each eat enough less, on the average, to reduce the acreage needed to feed one person by about one-twelfth of an acre. But remember---we are eating more milk, and pork, and vegetables, things which take a relatively larger amount of land. We are eating enough more of those things to have increased the acreage needed for feeding the average one of us by about one-eighth of an acre.

Then there is that extra sugar we have been eating. Most of that sugar has come from Cuba, Porto Rico, Hawaii, and the Philippines. But if it were produced in the continental United States, it would only take about one one-hundredth of an acre of beets to supply each one of us with our additional sugar ration.





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So you gather, from what Dr. Baker says, the net result of the change in diet of the American people has been an increase in crop land needed to feed each person, of about one-twenty-fourth of an acre.

Since beef takes more land than does either pork or milk if this tendency to eat less beef keeps on, it will require less acreage of crop and pasture land to feed each one of us.

And although the changes in diet, taken by and large, have not made much change in the amount of land needed on the whole, the changes have had quite a bit of influence on the demand for the products of particular regions. In some cases, they form an important part of the big question of "The Proper Use of Land."

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ANNOUNCEMENT: Your farm reporter at Washington has just reported to you an interview with Dr. O. E. Baker of the United States Department of Agriculture on the effect changes of diet have had on the needs for farm land. This Station\_\_\_\_ cooperates with the United States Department of Agriculture in presenting this report.

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YOUR WASHINGTON FARM REPORTER.

Wednesday, December 30, 1931.

NOT FOR PUBLICATION

Speaking Time: 10 Minutes.

All Regions

PLANNING THE 1932 POULTRY CAMPAIGN

OPENING ANNOUNCEMENT: Every Wednesday Your Washington Farm Reporter broadcasts the results of an interview with one of Uncle Sam's poultry specialists. The subject for today is PLANNING THE 1932 POULTRY CAMPAIGN, and now I'll turn the microphone over to Your Reporter and let him tell you about it. All right, Mr. Reporter.

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A few years ago a certain young man surprised the whole world by flying across the Atlantic ocean in an airplane.

The actual trip itself required only about 36 hours, but days, weeks, and even months were spent in preparation for the flight. A great deal of planning and thought was put into that trip for weeks before the plane finally rolled down the field and took off for Paris.

Of course, you listeners recall the Lindbergh flight, and also the flights of others who succeeded in crossing the Atlantic both ways after many delays, much preparation and careful planning.

At this particular time I'm going to talk about planning the 1932 poultry campaign, and I'm going to emphasize preparation, planning, and careful thinking because they are just as important to the success of the poultryman as they were to the success of Lindbergh. If you want to bring your poultry business to a successful landing one year from today--- NOW is the time to start planning and thinking.

Mr. A. R. Lee is poultry specialist for the Federal Bureau of Animal Industry. I asked him the other day what a poultryman should consider FIRST in planning his 1932 campaign.

"Well," he said, "first, the flock owners of this country should produce not more but better poultry, raising the efficiency of their flock by careful breeding and selection."





"Mr. Lee", I interrupted, "hasn't the year 1931 been pretty hard for a great many poultrymen?"

"We have had better years" he answered. "Prices of poultry and eggs, like the prices of most other commodities have reached lower levels during 1931 than for many years. Egg prices were very low early in the year but are much higher now, so that, with cheap grains, the poultry raiser is getting a much better return than he was a year ago. Since June of this year the margin between feed costs and egg prices has been quite good and very much better than it was last year. The poultry industry is in better condition than many other lines of agriculture. Besides, feeding the surplus grain to laying pullets is a good way to market low-priced grains."

"Would you recommend an expansion of the poultry industry for 1932?" I asked.

"I would advise hatches at least equal to 1931," he replied. "As long as feed prices remain low poultry raisers should be able to obtain good returns from their flocks. There was a reduction of 10 per cent in the number of chickens raised in 1931 and commercial hatcheries reported about 25 per cent less chicks hatched. However plenty of eggs and of poultry were produced this year while large storage eggs and very moderate consumption this fall has made a weak market for refrigerator eggs."

"What about turkeys for 1932?" I said. "The Turkey market was good at Thanksgiving time," Mr. Lee replied, "while turkey raisers generally had a fairly good season this year. There appears to be opportunity for continued growth of commercial turkey farming with an increasing demand for turkey poults produced in commercial hatcheries."

"Were the chicks in 1931 early hatched?" I inquired.

"No, altogether too many were late hatched," was his prompt reply.

On the subject of early hatching Mr. Lee said; "I'd plan to hatch 'em earlier in 1932 than I did in 1931. Early hatching in the poultry business is a sound business practice, and I'd plan for it not only this coming spring, but every spring."

"What else would you plan for your 1932 poultry campaign?" I questioned.

"Well," he said, "If I were to do my own hatching I'd plan to use male birds bred for egg production and hatch early;

If I were going to buy baby chicks I'd be sure they came from selected, bred-to-lay flocks;

I'd plan to cull the laying flock carefully;

TO OBSERVE STRICT RULES OF SANITATION IN ALL OPERATIONS;

To feed for high egg production; and

To produce infertile eggs during the summer."

Mr. Lee was giving me such good practical information that I couldn't afford to let him quit talking so I asked him about a GROW-HEALTHY-PULLETS campaign for 1932.



"It would be hard to select a better time," he responded. "If you want to try a grow-healthy-pullets campaign; you must plan to hatch early, raise clean chicks, use clean brooders, clean litter, clean ground, and clean feed. If you want figures on the profit and advantage in growing healthy pullets, get in touch with your county agent, your State college of agriculture or write to the United States Department of Agriculture in Washington, D. C."

Mr. Lee said that many poultrymen, especially owners of general farm flocks, string out the hatching season from spring until late in the summer. He believes that hatching or buying all chicks in one or two lots and brooding them in a regular brooder house with a stove would be a practical improvement on many farms and a good resolution to make for New Year's day.

Then I said, "Mr. Lee, you have mentioned a number of points in planning the 1932 poultry campaign. Which one of these points do you consider the most important?"

"All the points I have mentioned are important in planning the 1932 poultry campaign. However, if I emphasized any one point---that one point would be SANITATION. Sanitation is still neglected on too many poultry farms. On most general farms, the land becomes infested even where the hens and chickens have free range. Land around the poultry house often gets bare and foul. This can be freshened up by plowing, liming and reseeded. If the poultry house is movable---move it to fresh ground occasionally. If it's not movable --- keep everything clean around it."

Mr. Lee says that NOW is the time to plan many of the practical business details for the spring poultry campaign. For instance,-----

How many chickens are you planning to raise in the spring of 1932?

Are you going to incubate these chicks or will you buy them?

Have you the necessary equipment for hatching and brooding the number of chicks you want to raise during the spring of 1932?

Do you have record sheets, business books, poultry bulletins and other necessary supplies connected with the business end of the poultry industry?

Attention to these matters NOW will reduce trouble, and maybe losses, later.

Folks I see that my time is just about up, but I do want to mention one more thing before I close.

Mr. Lee says that MASH feeding is always an important item in the successful management of poultry flocks. Good laying mash helps the hens to lay and good growing mash helps the chicks to grow; therefore, in planning your 1932 poultry campaign be sure to give some thought to the proper feeding of MASH.

Ground wheat and corn, wheat bran, middlings, oats, meat scraps and many other mash ingredients are cheap this year. Take advantage of that situation, and feed plenty of MASH.

The best grade of eggs have been bringing good prices all the fall.





If you are prepared to do so---take advantage of that situation and market fancy, fresh eggs. Ordinary fresh eggs brought only medium prices this fall. I'm not through, but I must stop. Good-bye now until next Wednesday.

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CLOSING ANNOUNCEMENT: That was Your Washington Farm Reporter broadcasting a poultry talk from Station\_\_\_\_\_in \_\_\_\_\_. Ask your county agent or your State College of agriculture to help you plan your 1932 poultry campaign.

